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CHARACTERISTICS OF SOCIAL NETWORKING SERVICES

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Abstract

Social networking services (SNSs) have recently emerged as a research topic of interest, in line with their commercial success and popularity. They are internet (sometimes mobile) services that have, as a primary purpose, the building and sustaining of users' social networks. In this article we conduct two analyses. We review the existing literature on social networking software, and we examine the functionality of four leading social networking services: Facebook, MySpace, Second Life, and Twitter. The two analyses are iteratively matched to provide an initial account of six characteristics evident both the in services themselves, and the literature which discusses them. The characteristics help shape the area of study, and can be tested and developed by more rigorous forms of research.

Keywords: *Social Networking Software, Social Networking Services*

1 INTRODUCTION

Internet-based services facilitating networking have been around for many years, but in recent years two new phenomena have emerged. Services which explicitly refer to themselves as networking or social networking services have emerged (and become very widely-used), and a body of literature has emerged which may become the basis for a new research area. In this article we help to scope the new research area by examining the characteristics of social networking services. The objective is to provide a set of characteristics which could help to understand, analyse and delimit objects of study within the new research area.

In the literature the services are known variously as social networking **services**, social networking sites and social networking software (SNS). Boyd (2007) identifies the first recognisable SNS as Six Degrees.com (emerging in 1997) and identifies a total of 43 SNS's including well-known services such as Friendster, LinkedIn, MySpace, Dogster, Flickr and Facebook. Although the names are familiar, their features and focus vary considerably, LinkedIn focusing on business networks, MySpace on blogging, Flickr on visual content and Facebook (originally) on students. The sites offer their users a wide array of functionality which overlaps considerably, but is by no means identical. The functionality also overlaps with many other types of software and services, such as home pages, blogging tools, instant messaging, on-line journalism, on-line communities, video and music distribution sites and on-line gaming. In the absence of very precise definitions of social networking sites, services or software, and the general evolution of Web 2.0 services towards communication, user-interaction and user-generated content, it becomes a useful task to identify the object of study through the identification of its principal characteristics.

In this research we first review the body of literature which explicitly concerns itself with SNS's. In an under-theorised and emerging research area, generating interest from several different disciplines, researcher's self-identification of the topic they are interested in provides an initial focal point. We study the literature to investigate which implicit and explicit conceptualisations of SNS the researchers make. We also inspect four sites which exhibit a high degree of social networking: Facebook, MySpace, Second Life, and Twitter. Analysis of social behaviour over such a wide range of sites and millions of users is a complex task, so we confine ourselves, in this study, to inspection of the functionality (features) of the software. The task is to identify which social behaviours the software supports and encourages, and which it precludes. We analyse determinant characteristics of SNS which are both shared by researchers in the literature, and can be shown to be supported by the functionality of several sites. In the conclusion we summarize the findings of both the literature review and the analysis of SNSs, and discuss the progress of research on this topic area.

2 METHODOLOGY

Literature reviews are an important part of the development of a field (Webster & Watson, 2002). They offer the opportunity to synthesize and reflect on previous theoretical work, thus providing secure grounding for the advancement of knowledge. Webster and Watson (2002) suggest that the elements of a good literature review include a structured approach to identifying the source material and the use of a concept matrix or other analytical framework leading to a coherent conceptual structuring of the topic. Articles were identified through a keyword search at Web of Science and Google Scholar, producing a library of papers with SNS in the title or abstract. The papers were then subjected to thematic analysis, particularly in respect to their definitions and characterizations of SNS. These themes were grouped in initial categories.

The SNS sites investigated were chosen to represent the most widely used and most referenced and discussed (in the literature), and to display a fairly divergent range of approach, functionality and focus – in other words to cover the landscape. The sites chosen are: Facebook, MySpace, Second Life, and Twitter. The functionality (features) of the software was recorded through complete analysis of the range of user-initiated actions that the software can support. This data was primarily collected by studying menus, and mouse-enabled actions, and reflects status of the four SNSs as of March 2008. The analysis is condensed for presentation in this article

The characterisation categories and software features were then matched and refined iteratively to produce a set of characteristics which are both supported by the literature, and can be demonstrated to be supported by the software.

3 THEORETICAL CHARACTERISTICS OF SNS

Existing research literature on Social Networking Software (SNS) mainly focuses on the use of SNS by individuals and groups, rather than on the features of the software applications themselves (e.g. (Byrne, 2008; Charnigo & Barnett-Ellis, 2007; Hargittai, 2008; Humphreys, 2008; Kim & Yun, 2008; Lange, 2008; Spertus, Sahami, & Buyukkokten, 2005; Stutzman, 2006). Such a focus clearly reflects assumptions related to the role of users in shaping software infrastructures. End users and their behaviour and attitudes are assumed to shape the technological infrastructure and, as a consequence, SNSs are basically identified with what users do with them. However, one should not overlook the occurring interplay between user agency and the software architecture, which can be argued to play a central role in shaping the actual outcomes in terms of networking processes and activities, related to SNSs.

Within the existing limited body of research specifically focusing on SNS, Boyd and Ellison (2008) provide a comprehensive overview of the history and development of SNS, also aiming at providing a preliminary definition of what a SNS is, drawing on an analysis of previous scholarship on the topic. By analyzing the wide array of SNSs that have emerged on the Internet from the late '90s on – including on-line applications that were not born as SNS but lately developed into such as a result of user demand –, they conclude that "SNSs are primarily organized around people, not interests", emphasizing the building of a **virtual identity** through individual profiles as the characteristic that specifically identifies SNSs. They describe SNSs as *egocentric networks*: "early public online communities such as Usenet and public discussion forums were structured by topics or according to topical hierarchies (…) social network sites are structured as personal (or "egocentric") networks, with the individual at the centre of their own community". SNSs become therefore defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2008).

Drawing on a qualitative study on teenage use of popular SNSs, such as Friendster and MySpace, Boyd (2007) argues that SNSs are characterized by three basic properties common to mediating technologies: persistence, replicability and invisible audiences. However, in the author's view, "networked publics add an additional feature – *searchability* – while magnifying all of the other properties" (Boyd, 2007, p. 8-9). Thus, the four characteristics of SNS are:

- Persistence: Unlike the ephemeral quality of speech in unmediated publics, networked communications are recorded for posterity. This enables asynchronous communication but it also extends the period of existence of any speech act.
- Searchability: Because expressions are recorded and identity is established through text, search and discovery tools help people find like minds. While people cannot currently acquire the geographical coordinates of any person in unmediated spaces, finding one's digital body online is just a matter of keystrokes.
- Replicability: Hearsay can be deflected as misinterpretation, but networked public expressions can be copied from one place to another verbatim such that there is no way to distinguish the "original" from the "copy."
- Invisible audiences: While we can visually detect most people who can overhear our speech in unmediated spaces, it is virtually impossible to ascertain all those who might run across our expressions in networked publics. This is further complicated by the other three properties, since our expression may be heard at a different time and place from when and where we originally spoke. (Boyd, 2007, pag. 9).

The establishment of a virtual identity controlled through profile building is therefore seen as crucial in defining SNS, together with the articulation of connections with other virtual identities, that represent the virtual audience whereby channels of communication can be developed. Studies on impression management and friendship performance focus on processes initiated by the online representations of self that are enabled by SNSs (Donath & Boyd, 2004; Fono & Raynes-Goldie, 2006; Skog, 2005). For instance, in investigating social interaction in an academic environment, Hewitt and Forte (2006) look at the use of Facebook between students and faculty members. Their findings raise issues related to the management of identity, and to privacy issues regarding content sharing. A characteristic that emerges as crucial is therefore the degree of control over user profiling allowed by different SNSs. Drawing on data gathered through ethnography and reaffirmed through data collection and visualization, Boyd and Heer (2006) analyze the use of profiling features in Friendster, concluding that virtual profiles in SNSs play a central role in context creation and interpretation, negotiating unknown audiences, and initiating conversations.

A number of contributions focus on the privacy issue raised by SNS diffusion (Preibusch, Hoser, Gürses, & Berendt, 2007). Gross and Acquisti (2006) carry out a survey study on privacy awareness and privacy concerns among Facebook users, concluding that while users voice their privacy concerns, they do not behave accordingly, and exerting only loose control over their personal information.

The **network building** activity, which results from the interaction between the digital personas, as a consequence, also plays an important role in defining core characteristics of SNS in the existing research. Findings by Choi (2006) point out that the main motivator for the use of SNS is to maintain and reinforce existing social networks in the offline world. Similarly, Lampe, Ellison and Steinfield (2007) show how a SNS like Facebook is actually not used for establishing new social networks, that is meeting new people online, but primarily to solidify existing social relations. In their opinion, this specific feature is the one that differentiates SNSs from previously existing online applications such as, for instance, newsgroups.

Regarding the network structure topic area, a large scale analysis of Facebook messaging (Lampe et al., 2007) points out the role of transaction costs reduction in explaining the number of links (or "friends") within SNS user nodes. A reduction in transaction costs can thus also be identified as a key factor of **network maintenance** activated through SNS. Boyd (2007) underlines the characteristics of persistence in how SNSs maintain networks, observing that "unlike the ephemeral quality of speech in unmediated publics, networked communications are recorded for posterity. This enables asynchronous communication but it also extends the period of existence of any speech act". Liu, Maes and Davenport (2006) and Liu (2008) underline how SNSs activate links that go beyond the formal "friendship" connections provided by the software applications, and develop an alternate network of tastes, which links individual users with each other.

A well-researched part of the existing literature on SNS underlines the dynamics of **network interaction** that stand at the basis of the idea of social networking software. Goodings, Locke and Brown (2007) adopt a psychology perspective in analysing ongoing conversations between users of MySpace. Drawing on an approach broadly informed by the principles of discursive psychology, they examine how the identity of users is constituted within interaction by drawing on symbolic resources. Moreover, their research underlines the significance of place and of establishing a delicate relationship between the on-line and off-line accomplishments. Kim and Yun (2008) focus on the way a SNS's design features and functions encourage users to transcend the interpersonal principles they imply in face-to-face interaction. They observe how users of a Korean SNS routinely negotiate multiple dialectical tensions that are created within the online world, transferred from face-to-face contexts, or shaped by culture.

Breslin and Decker (2007) draw on Knorr-Cetina's concept of "object-centred sociality" (Knorr-Cetina, 1997) in arguing that SNSs' unique characteristic is the capacity of linking individuals around **shared content**, rather than just of providing simple connections without any intermediate objects – such as, for instance, multimedia content. Based on a longitudinal analysis of the development of SNSs in trying to sketch the future evolution of SNSs, they point out that so far the main feature that distinguished a successful SNS from an unsuccessful one has been its focus on content. Les successful sites, they argue, "act simply as enhanced address books" (Breslin & Decker, 2007, pag. 87). The evolution of SNSs will increasingly move toward bringing users together around shared objects (e.g.: photos on Flickr, job information on LinkedIn, video clips on YouTube and music on Last.fm,), making *object-centredness* the SNSs' main characteristic.

4 EMPIRICAL CHARACTERISTICS OF SNS

In this section we draw on themes emerging from the literature analysis to investigate four popular social networking services: Facebook, MySpace, Second Life, and Twitter.

Social network building tools are used for people to connect with friends, family, workmates and others. Users create profiles that contain photos, presentation of personal interests, CVs and contact information. Viewing of the detailed profile can be restricted to confirmed contacts or networks. Users connect to other individual users or groups to establish their networks, and this personal network expands by connecting to the networks of others. A user's activities are made visible for other users in his or her network. If a user establishes new relations, other users in her network may be notified. The idea is that the values of two users' networks can expand by exchanging contacts and groups. This is therefore an example of network economy, where every node's potential value increases for every new node that links to it, since every new user represents an opportunity to increase the network.

Specific features vary slightly between various social networking services (like Facebook, LinkedIn and Lunarstorm), since purposes and target groups are different. Facebook originated as a service for students to keep in touch, LinkedIn is more business-oriented and Lunarstorm is oriented towards youngsters in Sweden. Common features include the opportunity to search through groups to identify other people with shared interests. Groups can be open for all to join, or restricted through invitation-only membership on. Users can initiate new groups, based on, for example, geographical area, age or interests. Messages may be distributed to individuals or members of a group. Social networking websites encourage users to constantly update their own profiles, by (for example) announcing what they are doing, where they are, or by uploading new contents such as photos. The calendar functionality used to invite others to join forthcoming events.

4.1 Facebook

Facebook (www.facebook.com) is an Internet-based service aiming at connecting people, sharing content and uploading photos among friends and relationship. Facebook claims to have more than 55 million users and an average of 250,000 new registered users daily (by April 2008), thus being one of the world most popular services. Functionality and design indicate a focus on private use and contacts are referred to as "friends". The infrastructure is developed and maintained by the owners but the content, like pictures, games and links, are uploaded and maintained by the users. Every user develops and maintains their own online profile, which is supposed to coincide with their offline identity, but no real control is made (or is possible). Users are encouraged to develop applications within the framework of the site, resulting in more than 20,000 unique applications. Facebook has dynamically developed new features, like Facebook Notes (a blogging feature) and news feeds displaying the recent activities of member's friends. There are a growing number of commercial activities using Facebook, even though the business models (except for advertisements) are not yet very well developed. Table 58summarizes Facebook's features, grouped by the six categories.

SNS features	SNS effects
Control of profile, of what kind of information to add, who is able to see what kind of information, how other people are able to connect to one's profile	Digital persona/ virtual identity
Profile building, where the user is encouraged to make close relation between online and offline reality	
Upload photos to be viewed by other users	

SNS features	SNS effects
Connection to network and groups. These represent a visible part of each user's profile, thus membership in these groups create each user's profile	
Connection with friends	Network building
People search	
Membership of groups (open or on invitation only)	
Tagging pictures	
Update your status of what you are doing now	Network maintenance
Send messages to friends or members of a group	
Inform other members about events	
Building new applications	User generation of virtual content and objects
Upload (and share) photos	
Develop new groups	
Generate quizzes, surveys, comparison of people etc	
Market events	
Opportunity to report groups and content	Network self-governance
New members have to confirm their identity by e-mail, and also confirm that their "real" identity coincide with their Facebook profile	Network self-governance
Facebook if mainly used to connect to people users have some kind of relationship with also outside the online sphere. Self-governance is mainly maintained by the fact that some friends will now you, thus decreasing the opportunity to split between the online and "real" profile.	

Table 58. Features and effects of Facebook

4.2 MySpace

MySpace is a social networking site with all the traditional features of such a service: profiles of members, networks and interaction between members. The profile can contain photos, videos and text-based descriptions in categories as interests and personality, background and lifestyle and schools. The website has a special section for profiles of musicians or bands where each profile holds up to 6 songs for download. MySpace also offers a number of services including a personal e-mail account and blog, discussion forums, an event list, comedy, classifieds and MySpaceTV (the latter is for video sharing). Interest-based groups can be also created. The SNS is free to use and financed by advertising. MySpace comes in 29 different versions aimed at different languages and countries.

A news bulletin from MySpace in 2006 reported that the site had more than 100,000,000 accounts. More recent (yet unconfirmed) figures from 2007 indicate up to 70,000,000 unique visitors a month, putting MySpace far ahead of Facebook. The first version of the website went on-line in 2003 and today the site is owned by Fox Interactive Media. Table 59 summarizes MySpace's features, grouped by the six categories.

SNS features	SNS effect
Control of own profile including control of photos, personal information and interests.	Digital persona/ virtual identity
Link from your profile to your favourite artists in MySpace.	
Express personal interests and opinions through a personal blog and links to other personal blogs.	

SNS features	SNS effect
Memberships of groups – other users will see that you are member of a group/forum and thus associate you with beliefs or interests of that group.	
Connect to friends found in MySpace	Network building
Search friends outside MySpace and invite them to join as your friend. Import address books from on-line e-mail services.	
Join groups and participate in discussions. Comment on blog posts by friends or other members.	
Invite other members to participate in events set up by you or join events set up by others.	
Easy access to send messages and instant messages to individuals or groups of friends.	Network maintenance
Notification of friends when you post something in a forum.	
Rank other users or block them from contacting you.	
Update status in your own profile to show what you are doing and/or where you are.	
Share music by your favourite artist through your profile if the artist allows you to do so.	
Form new groups around specific topics	User generation of virtual content and objects
Distribute content created outside MySpace. Content in focus is music and video.	
Advertise in the MySpace classifieds.	
Create personal profile layouts on your own or by using third parte profile editors.	
Use the MySpace developer platform to create new applications.	
Report individuals, groups and content to the administrators.	Network self-governance
Opportunity to block other users from contacting you.	

Table 59. Features and effects of MySpace

4.3 Second Life

Second Life is an Internet-based virtual world launched in 2003, developed by Linden Research, Inc. A downloadable client program called the Second Life Viewer enables its users (residents) to interact with each other's avatars, providing an advanced social networking service. Linden Labs claims over 6,000,000 residents from 106 countries. Residents can explore, meet other residents, socialize, participate in individual and group activities, and create and trade items (virtual property) and services. Second Life has its own in-world economic market and currency (Linden dollar - exchangeable for real currencies). Whereas the geo-spatial infrastructure is managed by the owners, the sites (islands) are mainly built by residents' in-world, using three-dimensional graphical manipulation and scripting. Businesses, interest groups and NGOs are widely represented, as are government agencies and political parties. Second Life's digital world has many connections with the external world. It mirrors the external world in appearance, the avatars are controlled by real people who also can choose to reveal their real identity, real goods and services are traded, in-world communications are supplemented with VOIP, email and web-cams, and in-world events such as conferences are held in parallel with their real life. Though the world is experienced as recreation by many of its residents, commerce, particularly the sex-industry, invests in the development of in-world facilities as a business opportunity, even though it is not clear which business models can

return a profit at this point. Table 60 summarizes Second Life's features, grouped by the six categories.

SNS features	SNS effect
Control of avatar appearance (human/non-human, gender, body shape, skin, hair, features, clothes, ornaments etc.)	Digital persona/virtual identity
Profile building	
Scripted control of avatar movement (poses, gestures, dances	
Land ownership; giving control of creation and manipulation of virtual objects;	
Ownership of virtual objects such as helicopters, houses, jewellery	
Control of environment such as on-line/not online; moving location; camera and light settings; silencing offensive residents	(sense of security in the digital persona)
Friendship (offering friendship)	Network building
People search	
Interest groups	
Friendship (recording friends, on-line notification, locating them); events notification	Network maintenance
Two way and group text/ voice chat	Network interaction (communication)
Organised events such as meetings, parties and concerts	
Exchange of objects (gifts, bartering, shopping)	Network interaction (content exchange)
Pre-programmed animations (e.g. dancing, sport, gaming)	Network interaction (social interaction)
Building virtual objects and scripts (e.g. houses, cars, clothes, animations)	User generation of virtual content and objects
Abuse reporting, marking of adult content, identification of minors, silencing of irritating or abusive residents, restricted entry to regions, restricted access to objects (such as cars and houses), control of group membership and ownership of self-generated content	Network self-governance
	Other
Walking, flying, teleporting + consequent choice of geographical environment	Exploration, learning, self-realisation + opportunities for network building
Connections to other digital media (wikis, blogs)	Maintenance of network over diverse digital media
Connection with off-line economy, connection of off-line + on-line interest groups, identity	Connection of on-line and off-line networks
On-line help	Personal management of software environment

Table 60. Features and effects of Second Life

4.4 Twitter

Twitter, launched in 2006, is an on-line application designed around the concept of micro-blogging. The on-line platform allows users to send public updates ("tweets") about themselves in the form of short text-based posts accessible to other users who have signed up to receive them. Posts are

limited to 140 characters, which make them suitable for delivery through instant messaging services, (e.g.: MSN Messenger), or short message services on mobile devices. Twitter is also designed to integrate within third party social networking software, such as Facebook. Facebook users can subscribe to Twitter and control it's services through Facebook. Users, who become friends, can read each other's posts on either the Twitter website, a mobile device, another SNS platform, or an instant messaging service. Users can control which friends receive their updates, and restrict the updates received from others: for instance, short message service on mobile devices can be switched off at night, or undesired users' updates can be refused. The software allows the addition of user created applications, such as graphic visualization of the networks created by user subscriptions to personal micro-postings. Table 61 summarizes Twitter's features, grouped by the six categories.

SNS features	SNS effects
Coupling picture with profile	Digital persona
Customize account design	
Indicate user status	
Control the degree of publicity of profile	
Block unwanted links	
User search engine	Network building
Location-based search engine	
Keyword-based search engine	
Import of personal e-mail contacts	
Invite by email	Network maintenance
Invite by SMS	
Email alerts	
SMS alerts	
RSS alerts	
Timeline of profile changes	
Visualization of network structure	
Updates from mobile	
Send private messages	Network interaction
User-created applications	User generation of virtual content and objects
Create "badges" to be included in other services (blogs, MySpace, etc.)	Other
Integration with other SNS (Facebook)	
Feedback to software developers	

Table 61. Features and effects of Twitter

4.5 Analysis summary

Table 62 summarizes the features of the four SNSs, distinguished by the six categories.

Category	Software feature	Second Life	Facebook	MySpace	Twitter
Virtual identity/ digital persona	Land ownership	X			
	Pre-programmed activities (e.g.) dancing)	X			
	Profile building	X	X	X	X

Category	Software feature	Second Life	Facebook	MySpace	Twitter
	Walking, flying, teleporting	X			
	Login	X	X	X	X
	Blog			X	
	Status updates		X		X
	Customize profile design		X	X	X
	Control the degree of publicity of profile		X	X	X
	Block unwanted links		X	X	X
Network building	Friendship (offering recording, on-line notification, etc.)	X	X	X	X
	Interest groups	X	X	X	
	New people alert			X	X
	Import contacts		X	X	X
	Forum		X	X	
	Search engine		X	X	X
Network maintenance	Connections to other digital media (wikis, blogs)	X			X
	Interest groups	X	X		
	Visualization of network structure				X
	Timeline of profile changes		X		X
Network maintenance	Alerts (email, SMS, RSS)				X
Network interaction (communicative + direct action)	Pre-programmed activities	X			
	Forum		X	X	
	Blog			X	
	Send message		X	X	X
	Instant messaging/ chat	X		X	X
	Wall		X	X	
	Poke		X		X
	Gifts		X		
User generation of Content	Video upload			X	
	User created applications		X		X
Network self-governance	Laws, rules, codes of behaviour	X	X		

Table 62. Comparison between the four SNS

5 CHARACTERISTICS OF SOCIAL NETWORKING SERVICES

Drawing on both analyses, theoretical and empirical, we provisionally identify six characteristics of social networking services for investigation:

Digital Persona/Virtual Identity

Social networking software facilitates the development of an on-line persona. A persona is, in this case, an image or representation of the user. The persona is controlled and developed by the user themselves (though the structure for that representation is given by the features of the software). The persona is always a projected image of the user and it may have more or less correspondence with the user's real identity (as they themselves understand it or as understood by other people).

Digital identity presupposes a digital public or audience – a profile is first meaningful when experienced by another user.

Network Building

The software offers tools and opportunities for building the social network(s) of the user. It facilitates searching for other users, recruiting tools for members of the user's off-line network, meeting or being introduced to other users, and grouping of users around themes and interests. Users build interlocking networks of friends, colleagues, work acquaintances, contacts with shared interests, family and so on. On-line networks can be independent, but they often overlap and interact considerably with users' off-line networks. The service is dependent upon achieving a critical mass – sufficient users to make it feasible to build up a meaningful network.

Network Maintenance

The software provides features for persistence, such that the user's network can reach over time, and survive changes to their or other users' persona. The software maintains the coupling between networked users irrespective of other changes in their real or on-line circumstances.

Network Interaction

The software provides ways for users to interact, through direct communication, shared activities, games, or exchange of virtual objects. The virtual environment minimises some difficulties connected with physical interaction, such as geographical or time separation, or mobility.

User Generation of Virtual Content

Not only are users responsible for controlling their own digital personas, but they have the opportunity to provide virtual content and digital objects. These can include text, pictures or video, music clips, three dimensional virtual objects, or programs or applications. This content is important both for the virtual identity of the user, but is also exchanged as a primary component of network interaction.

Network Self-Governance

The network displays observable social norms, social conventions, informal codes of behaviour, and (sometimes) formal rules and regulations. Governance structures are partly enforced by the service providers, partly written into the way the software functions (what is enabled or disallowed), but primarily reproduced by the on-line communications, actions and behaviours of the network members.

6 CONCLUSION

Though the SNS phenomenon is established and expanding, researchers have yet to build a shared understanding of the area, let alone a robust empirical basis on which to build sound analytical and interpretative tools. In this paper we provide an early attempt to scope the characteristics of SNS in a systematic way. We have explored the characteristics of SNSs by analysing both literature and the functions enabled by selected SN sites. Theoretical and empirical analyses are iteratively matched. We identify six analytical categories evident both in the services, and in the literature that discusses them: Digital Persona/Virtual Identity; Network Building; Network Maintenance; Network Interaction; User Generation of Virtual Content; Network Self-Governance. The six characteristics represent an early attempt to understand the shape of the research object in relation to the information systems discipline.

The analysis of four of the most popular existing SNS, Facebook, MySpace, Second Life, and Twitter, suggests that the categorisation scheme can offer some interesting insights into current SNSs. The

analysis helps to reveal both what they largely have in common, and how they differ in focus. Of the six categories, features related to the building of a digital persona and to network building are the most prevalent in the services we studied. College-based networks, as in Facebook, or three-dimensional virtual worlds, as in Second Life, or even short message service-based platforms, as Twitter, all show a strong focus on identity profiling and network building (in the form of contact creation or friendship). Other categories (network maintenance, network interaction, user generation of virtual content, and network self-governance), are operationalized in quite diverse ways. For example, only Twitter provides a graphic visualization of network structure. On the other hand, the exchanging of virtual content through user-generated applications is a core feature of Facebook, but not of other services such as MySpace. Blogging is a feature uniquely provided by MySpace within the network interaction category, while SMS alert is a form of network maintenance that only Twitter currently features. Thus our rather limited survey of four SNS suggest that digital persona and network building-related features represent the core characteristics of these SNSs, whereas the diversification lies in differing implementations of the other characteristics. However the empirical sample is too small to reach any firm conclusions. However it is probably wrong to think of MySpace and Facebook as archetypes, and other services as less successful imitators, and more beneficial to study the differing market positions of SNSs.

This initial research is focused on understanding, defining and delimiting the object of study (social networking services) and provides a starting point for further elaboration (perhaps using social networking theory as a theoretical framework) and more extensive empirical examination. More services need to be studied, and the limited focus on the enabling software functions and features needs to be extended to include patterns of usage of the services. These types of studies are becoming widespread at the present time. However, our six characteristics also provide a preliminary basis for understanding differing orientations and market strategies of the various services. Positioning of the service in relation to the various categories can help to in the understanding of where its principal focus lies, and could in principal be measured and mapped to a six-cornered graph. The service's enabling software features and functions explain how its owners and user community operationalize this position. Patterns of usage (not studied here) explain how the market orientation of the service is perceived and enacted by its users. These theoretical tools can help to understand the market position of the service, its branding, user segment, revenue model, user behaviour, relationship to social networking conducted in the physical world, relationship to other types of net and mobile services, and the way the software and services are conceived, constructed and used.

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